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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MAHATAN, CHANNING	
ART UNIT	**PAPER NUMBER**
1631	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,451	PITTMAN ET AL.	
	Examiner	Art Unit	
	Channing S. Mahatan	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) *1-14 and 20-39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-19 and 40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-40* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4 Sheets*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

APPLICANTS' ELECTION

Applicant's election with traverse of Group IV (claims 15-19, 40, and the gene RAGE (AGER); drawn to a solid surface detection of detection agents) in the reply filed on 07 February 2005 is acknowledged. The traversal is on the grounds that "a search and examination of RAGE (AGER) as a gene characteristic of rheumatoid arthritis (R.A.) would also entail searching for other genes characteristic of R.A.". However, this is not found persuasive because as indicated in the '*RESTRICTION/ELECTION REQUIREMENT*', mailed 22 March 2004, the instant claims read upon patentable distinct gene wherein each gene is patentably distinct because they are unrelated. Applicants are directed to the following section of the M.P.E.P. for guidance regarding distinction among genes (i.e. nucleotide sequences)

M.P.E.P. § 803.04 states:

> "Nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another. These sequences are thus deemed to normally constitute independent and distinct inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such nucleotide sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq."

Applicants are reminded that the restriction requirement is to a single gene and is NOT a specie election requirement. The requirement is still deemed proper and is therefore made FINAL.

CLAIMS UNDER EXAMINATION

Claims herein under examination are claims 15-19, 40, and the gene RAGE (AGER). Claims 1-14, 20-39, and all other genes are withdrawn from further consideration pursuant to 37 C.F.R. § 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim.

SEQUENCE COMPLIANCE

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. § 1.821(a) (1) and (a) (2). This application fails to comply with the requirements of 37 C.F.R. § 1.821 through 1.825 due to the sequence as in the specification on pages 86-90 (SEQ ID NOs. 1-29), and no submission of the following items. Therefore, Applicants are required to submit the following:

1. As a separate part of the disclosure on paper copy or compact disk copy, a "Sequence Listing" as 37 C.F.R. § 1.821(c).

2. A copy of the "Sequence Listing" in computer readable form as required by 37 C.F.R. § 1.821 (e).

3. A statement that the content of the paper and computer readable copies are the same and include no new matter, as required by 37 C.F.R. § 1.821 (f) and 37 C.F.R. § 1.821 (g).

Applicants are given the same response time regarding this failure to comply as that set forth to respond to this office action. A complete response to this office action includes compliance with this sequence rule compliance requirement. Failure to respond to this requirement may result in abandonment of the instant application or a notice of a failure to fully respond to this office action.

Claims Rejected Under 35 U.S.C. § 112 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

LACK OF ENABLEMENT

Claims 15-19 and 40 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 15, 18 and all claims dependent therefrom require the RAGE (AGER). However, the specification provides the following with respect to RAGE (AGER):

> "The invention is based at least in part on the discovery of gene expression profiles of cells of subjects having R.A. As described in the Examples and in Tables 1-5, cells from R.A. subjects have genes which are expressed at higher levels (i.e., which are up-regulated) and genes which are expressed at lower levels (i.e., which are down-regulated) relative to cells of the same type in subjects which do not have any symptoms of R.A. In particular, as described in the Examples, it has been shown that genes SOCS3 (CISH3); RAGE (AGER); LST-1 (LY117); SAA 1-3; HMG-1; S100A8, A9, and A12; SLPI; GILZ; PTPN-18; GADD-45A and B; Legumain (PRSC1); FST1; Lcn2; GPI; SpiL; and TSG-6 are expressed at higher levels in the diseased cells relative to the corresponding normal cells. Other genes, e.g., CMAK2B; PLA2G2A; GBAS and SOX15, are down-regulated in the diseased cells relative to the corresponding normal cells."

Pages 6 (line 5) and 30 (line 28) of Table 1 indicates: 1) "name": RAGE_cds; 2) "qualifier": U89336; 3) "GeneSpring qualifier": U89336; 4) "Pateints called "P">4": PASS; 5) "# "P" (RA)": 9; 6) Avg. Freq-RA Patients": 71.78; "Normals called "P">6": PASS; "#"P" (Normal)": 13; "#"P"(RA)": 9; "Avg Freq Normals": 21.69; "Ratio": 3.31; "Fold Change": 3.31; "Symbol": HBX2; "Description": homeobox PBX2 gene; "Function" intron-exon boundaries identified by a contig of ESTs with GenBank Accession Numbers W76064, R59617, W72507". The "qualifier" (i.e. second column in Table 1) appears to imply reference to Genbank Accession Numbers, wherein the specification states:

> "Accession numbers, Affymetrix identifiers ("qualifiers") and gene name are depicted in the Tables. The sequence of most genes are available on Genbank. Genes whose Accession Number is characterized by "HT-...." or "HG-...." are available in the TIGR database on the internet (page 82, lines 23-24)

Given the above information from the disclosure the Examiner entered the corresponding "qualifier" of RAGE (U89336) in Genbank, wherein the U89336 has the definition "Homo sapiens HLA class III region, containing NOTCH4 gene, partial sequence, homeobox PBX2 (HPBX) gene, receptor for advanced glycosylation end products (RAGE) gene, complete cds, and 6 unidentified cds, complete sequence" (Refer to PTO-892 Genbank Accession Number U89336). However, with respect to the disclosure no further information is provided for RAGE (AGER) (i.e. sequence structure, fragments thereof, etc.). Therefore, this appears to be an attempt to incorporate essential subject matter into this application by reference to the Genbank Accession Number U89336. Such incorporation is improper because the gene RAGE (AGER) (U89336) is considered essential material to elected invention, wherein the instant claims require said RAGE (AGER) gene. The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. If basis for such incorporation exists, Applicants are required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the Applicants, or a practitioner representing the Applicants, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 U.S.P.Q. 157 (C.C.P.A. 1973); *In re Hawkins*, 486 F.2d 579, 179 U.S.P.Q. 163 (C.C.P.A. 1973); and *In re Hawkins*, 486 F.2d 577, 179 U.S.P.Q. 167 (C.C.P.A. 1973). Therefore, the specification is not enabling due to the lack of essential subject matter, via the improper citation of a published document. Further, it should be noted U893336 found in Genbank appears to have been updated on 08 July 2004, which is after the filing date and claimed priority of Applicants invention. Thus, it is additionally unclear what

the structural sequence (i.e. nucleic acids) of RAGE (AGER) is at the time of filing.

LACK OF WRITTEN DESCRIPTION

Claims 15-19 and 40 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification provides the following definition regarding "detection agents" (claims 15-17 and 40) and "antagonists" (claims 18-19):

> "A "detection agent of a gene" refers to an agent that can be used to specifically detect a gene or other biological molecule relating to it, e.g. RNA transcribed from the gene and polypeptide encoded by the gene. Exemplary detection agents are nucleic acid probes which hybridizez to nucleic acids corresponding to the gene and antibodies." (page 11, lines 26-29)
>
> "Antagonists" as used herein is meant to refer to an agent that downregulates (e.g. suppresses or inhibits at least one biological activity of a protein. An antagonist can be a compound which inhibits or decreases the interaction between a protein and another molecule, e.g. a target peptide or enzyme substrate. An antagonist can also be a compound that downregulates expression of a gene or which reduces the amount of expressed protein present." (page 9, lines 11-15)
>
> "Antagonists may be antisense nucleic acids, siRNAs, ribozymes or dominant negative mutants." (page 5, lines 15-16)

Therefore, by way of the specification: 1) claims 15-17 and 40 are directed to encompass nucleic acids of full length and fragments (i.e. probes) of the RAGE (AGER) gene and polypeptides encoded by the gene; and 2) claims 18-19 are directed to encompass compounds which down regulate RAGE (AGER) gene (i.e. nucleic acids, siRNAs, ribozymes, or dominant negative mutants). However, no "detection agents" (i.e. sequence structure) and/or "antagonists" are described in the specification and thus the instant application fails to meet the written description provision of 35 U.S.C. § 112, first paragraph. This is a rejection based on a lack of WRITTEN DESCRIPTION.

> Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with

> reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

In the absence of a reasonable clarity of the claimed invention the skilled artisan cannot envision the detailed chemical structure of the encompassed nucleic acids (i.e. "detection agents") of the RAGE (AGER) gene and compounds (i.e. antagonists) of the RAGE (AGER) gene, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The nucleic acids (detection agent) and the compounds (i.e. antagonists) are required. See Fiers v. Revel, 25 U.S.P.Q. 2d 1601, 1606 (C.A.F.C. 1993) and Amgen Inc. V. Chugai Pharmacentical Co. Ltd., 18 U.S.P.Q. 2d 1016. In Fiddes v. Baird, 30 U.S.P.Q. 2d 1481, 1483, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence.

Finally, University of California v. Eli Lilly and Co., 43 U.S.P.Q. 2d 1398, 1404, 1405 held that:

> ...To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966.
>
> An adequate written description of a DNA, such as the cDNA of the recombinant plasmids and microorganisms of the '525 patent, "requires a precise definition, such as by structure, formula, chemical name, or physical properties," not a mere wish or plan for obtaining the claimed chemical invention. *Fiers v. Revel*, 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Accordingly, "an adequate written description of a DNA requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the DNA itself." Id. at 1170, 25 USPQ2d at 1606.

> The name cDNA is not itself a written description of that DNA; it conveys no distinguishing information concerning its identity. While the example provides a process for obtaining human insulin-encoding cDNA, there is no further information in the patent pertaining to that cDNA's relevant structural or physical characteristics; in other words, it thus does not describe human insulin cDNA. Describing a method of preparing a cDNA or even describing the protein that the cDNA encodes, as the example does, does not necessarily describe the cDNA itself. No sequence information indicating which nucleotides constitute human cDNA appears in the patent, as appears for rat cDNA in Example 5 of the patent. Accordingly, the specification does not provide a written description of the invention of claim 5.

Therefore, the full breadth of the claims do not meet the written description provision of 35 U.S.C. § 112, first paragraph. Applicants are reminded that Vas-Cath makes clear that the written description provision of 35 U.S.C. § 112 is severable from its enablement provision. (See page 1115).

Claims Rejected Under 35 U.S.C. § 112 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-19 and 40 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

VAGUE AND INDEFINITE

Claims 15, 18, and all claims dependent therefrom are confusing as written because they embrace more than the elected invention. Applicants are reminded of the election of the gene RAGE (AGER) in the '*RESPONSE*' filed 07 February 2005. Applicants are requested to amend the claims so that they reflect the elected invention, wherein the instant claims presently reflect "a plurality of detection agents of genes" and "a plurality of genes" (i.e. SOCS3(CISH3), etc). Note that it is difficult to evaluate the claims for enablement because the language used does not

reflect the invention being examined. The examiner cannot anticipate the final form of the claims.

Claim 15 and all claims dependent therefrom recite the limitation "wherein less than about 50% of the detection agents on the solid surface are not detecting genes characteristic of R.A." which is considered vague and indefinite. The above limitation is confusing wherein the elected gene RAGE (AGER) appears to be a gene characteristic of R.A. and therefore if detection agents are present for RAGE (AGER) then 100% of the detection agents would detect genes characteristic of R.A. (i.e. RAGE). It would then appear that the above limitation is impossible to fulfill (i.e. indicated exclusionary principle). Clarification of the metes and bounds, via clearer claim language, is requested.

Claims 15 and all claims dependent therefrom recite the limitation "less than about 50%" which is considered vague and indefinite. The above limitation implies a range considered to be "about 50%", which is unclear. One interpretation is that 60% is considered to be "about 50%". Clarification of the metes and bounds, via clearer claim language, is requested.

Claim 16 and all claims dependent therefrom recites the limitation "which hybridizes specifically to the genes" which is considered vague and indefinite. The specification provides the following regarding the above language:

> "The term "specific hybridization" of a probe to a target site of a template nucleic acid refers to hybridization of the probe predominantly to the target, such that the hybridization signal can be clearly interpreted. As further described herein, such conditions resulting in specific hybridization vary depending on the length of the region of homology, the GC content of the region, the melting temperature "Tm" of the hybrid. Hybridization conditions will thus vary in the salt content, acidity, and temperature of the hybridization solution and the washes." (page 18, lines 4-9)

However, the above definition fails to provide a clear and understood meaning for "specific hybridization". The definition is characterized by vague and indefinite limitations therein, such

as "hybridization of the probe predominantly to the target, such that the hybridization signal can be clearly interpreted". The terms "predominantly to the target" and "clearly interpreted" imply some further criteria or range of values (i.e. threshold) that establishes the probe to predominantly hybridize to the target and to result in a clear interpretation of the hybridization signal. Clarification of the metes and bounds, via clearer claim language, is requested.

Claims 15, 18, and all claims dependent therefrom utilize the abbreviations "R.A." and "RAGE (AGER)". The specification provides the following with respect to "R.A.":

> "For example, rheumatoid arthritis (R.A.) is a systematic inflammatory disease that commonly affects the joints, particularly those of the hands and feet." (page 1, lines 12-14)

Refer to the above 35 U.S.C. § 112 1st Paragraph Rejection regarding the specification disclosure for RAGE (AGER). However, abbreviations in claims are considered vague and indefinite unless accompanied by the full name, usually in parentheses. Clarification of the metes and bounds, via clearer claim language, is requested.

Claims Rejected Under 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-17 and 40 are rejected under 35 U.S.C. § 102(b) as being anticipated by Affymetrix human Genechip HU6800 Set (Affymetrix, Technical GeneChip Expression Platform: Comparison, Evolution, and Performance, pages 1-12), which is in public use or sale prior more than one year prior to the date of the claimed priority of the instant application.

Affymetrix human Genechip HU6800 Set (claims 15-16 and 40; i.e. array/solid support kit) is indicated as being commercially available in 1998, wherein the set comprised four arrays representing 8,000 full-length genes (page 1, right most column, lines 7-12). The HU6800 Set has between 1,700-1,800 probe (i.e. "detection agents"; Refer to above 35 U.S.C. § 112 1st Paragraph for Applicants' definition) sets covalently-linked per array (page 1, right most column, lines 12-15). Applicants have disclosed the following which formulates the basis of this rejection:

> "Table 1 shows genes identified using the Hu6800 Affymetrix chip." (page 82, line 28)

The RAGE (AGER) is disclosed on pages 6 (line 5) and 30 (line 28) of Table 1 (Refer to above 35 U.S.C. 112 1st Paragraph Rejection). With respect to the "convalently link" limitation found in claim 17, Applicants indicate Affymetrix utilizes photolithography for the synthesis of these chips:

> "One novel synthesis technology is that developed by Affymetrix (Santa Clara, Calif.), which combines photolithography technology with DNA synthetic chemistry to enable high density oligonucleotide microarray manufacture. Such chips contain up to 400,000 groups of oligonucleotides in an area of about 1.6 cm^2. Oligonucleotides are anchored at the 3' end thereby maximizing the availability of single-stranded nucleic acid for hybridization. Generally such chips, referred to as "GeneChips®" contain several oligonucleotides of a particular gene, e.g., between 15-20, such as 16 oligonucleotides. Since Affymetrix (Santa Clara, Calif.) sells custom made microarrays, microarrays containing genes which are up- or down-regulated in R.A. can be ordered for purchase from Affymetrix (Santa Clara, Calif.)." (page 33, lines 18-26)

Such photolithography technology provides for "covalently linking" detection agents to the solid surface as indicated by Applicant:

> Light-directed combinatorial synthesis of oligonucleotide arrays on a glass surface can be performed with automated phosphoramidite chemistry and chip masking techniques similar to photoresist technologies in the computer chip industry. Typically, a glass surface is derivatized with a silane reagent containing a functional group, e.g., a hydroxyl or amine group blocked by a photolabile protecting group. Photolysis through a photolithogaphic mask is used selectively to expose functional groups which are then ready to react with incoming 5'-photoprotected nucleoside phosphoramidites. The phosphoramidites react only with those sites which are illuminated (and thus exposed by removal of the photolabile blocking group). Thus, the phosphoramidites only add to those areas selectively exposed from the preceding step. These steps

> are repeated until the desired array of sequences have been synthesized on the solid surface. (page 35, lines 18-27)

With respect to claim 40, the "instructions" is considered non-functional descriptive material (i.e. paper with words) and therefore is given no patentable weight. No further elements to the kit (claim 40) are indicated other than a solid surface of claim 15. Therefore, Affymetrix anticipates the instantly claimed invention because it contains detection agents (i.e. nucleic probes) for RAGE (AGER) as factually disclosed by Applicants and is established as being commercially available in 1998.

INFORMATION DISCLOSURE STATEMENT

The 'International Search Report' (PCT/US01/48968) cited in the '*INFORMATION DISCLOSURE STATEMENT*' filed 15 August 2003 was considered, however, was lined through because the cited reference is not publicly available.

EXAMINER INFORMATION

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 C.F.R. § 1.6(d)). The CM1 Fax Center number is either 571-273-8300.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Channing S. Mahatan whose telephone number is (571) 272-0717. The Examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D., can be reached on (571) 272-0718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of

the problem. The Patent Electronic Business Center will notify Applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables Applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Examiner Initials: CSM

Date: April 29, 2005

Ardin H. Marschel 4/30/05
ARDIN H. MARSCHEL
PRIMARY EXAMINER